FARM REPORT

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FROM THE PRESIDENT'S DESK: FROM COLD TO HEAT STRESS

Early each year, just as spring is on the horizon, I feel duty-bound to remind readers that heat stress is on the way. Especially given the cold temperatures we've experienced this winter it may seem poor timing, but time flies and soon we will be more concerned with fans than with frozen feed. Now is the time to begin making sure that all is in order before the first wave of heat stress inevitably occurs. Research supports the wisdom of effectively cooling your cows, even in northern regions of the U.S. It's rare to see a cow barn in the North Country nowadays with no cooling capacity, but it still far too common for farmers to underestimate the combination of temperature and humidity we routinely experience. The economic impact of heat stress is severe: even for well-managed dairies, heat stress can easily reduce intake by 10 to 15% and milk yield by 20% or more.

First among the many negative consequences of heat stress in dairy cattle is an increase in core body temperature that leads to prolonged standing in an effort to cool off. High-producing dairy cows can become heat stressed at a temperature-humidity index (THI) of only 68. Their greater sensitivity to heat stress is due largely to higher metabolic heat output associated with higher milk production. Wisconsin researchers observed that, as THI increased from 56 to only 74, lying time decreased by 3 hours per day while standing in the alley increased by 2 hours per day. Lameness score and claw lesions increased markedly and were associated with greater standing time, sporadic feeding, and slug feeding. We need to remember that THI of 74 is common in the northeast and our herds can experience all of these detrimental behavioral and health responses to heat stress.

Ordinarily, the comfort of the resting surface, or competition for the resting space, determines whether a cow will meet her resting requirement. However, during heat stress conditions core body temperature appears to control whether the cow is standing or lying. Cornell researchers found that the cow stands up once her core body temperature reaches approximately 102.0˚F, and she typically won't lie back down again until her body temperature falls to approximately 100.9˚F. Research published recently from Arizona and Missouri confirms that cows are very unlikely to lie down when their body temperature is above about 102˚F. So, if you want your cows to achieve their required resting time, cooling is a must!

And let's not forget chewing. There is a strong biological relationship between

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MANAGING FORAGE GRASSES

Farmers have been growing grasses for so long you'd think by now we'd have all the answers. But new varieties are released, there's recent interest in meadow fescue, and research on fertilizing grasses continues to influence recommendations. (One result of these changes: job security for those of us advising farmers!) Here are a few suggestions — some old, some new — in getting the most from your grass fields.

- **Apply nitrogen soon after grass breaks dormancy.** Your N rate depends on manuring history, grass species and density of stand, but on fields with a good stand of a responsive species apply 90-100 lbs./acre of actual N, equal to about 200 lbs. of urea or 300 lbs. of UAN. The N in manure is as good as fertilizer N but you may not want to take the time this spring or risk cutting up soft fields. Probably better to delay manure application until after first cut or when fields have firmed up.
- **Don't overdo N following first cut.** Too much N can reduce tillering, especially in perennial ryegrass and tall fescue and probably in meadow fescue as well. A high rate of N fertilizer right after harvest suppresses carbohydrates in the tillers. This means fewer new tillers and a decline in tiller density, leading to more gaps in the stand and more places for weed seeds to germinate. Apply 50-60 lbs. N/acre between cuts on your best grass stands, 30-40 lbs./acre on the rest. A similar rate of N (or manure) in August will boost plant carbohydrate levels and should result in higher yields the following spring. Manure is A-OK but rely on manure analysis to determine the application rate.
- **Grass will do well with a soil pH of 6.2 but don't let pH levels get too low.** This is especially important if you'll rotate the field to another crop in a year or two. Nitrogen fertilizer is acidifying while cow manure is almost neutral, so soil pH is influenced by both N rate and source.
- **For first cut, "When you see the head the quality is dead."** Harvest at the boot stage for "milk cow quality" forage. Don't wait for heading for second and later cuts; mow whenever you decide there's enough forage to make it worth the trip with the mower or mower-conditioner.

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SOIL TESTS AND FERTILIZER RECOMMENDATIONS

Using carefully matched soil samples I've compared the soil analyses from half a dozen commercial and university laboratories (including one owned by a fertilizer company) and have concluded that all can accurately determine whether soil fertility — mainly pH, P and K — is low, medium or high. However, the fertilizer recommendations the various labs make using these results is another deal entirely. Part of this is due to the fertilization philosophy of the laboratory, but also because some soil test labs don't ask for manure data so have no way of accounting for the nutrients that will be supplied by manure.

Some soil testing philosophies can cost the farmer a lot of fertilizer expense without a good return. Feed the crop or feed the soil? Apply enough nutrients (manure or fertilizer) to replace just what's removed by the crop, or enough to build soil fertility where soil test levels are less than optimum? Any of these can be done responsibly, and I'm very much in favor of building soil potassium levels to a soil test reading of at least medium-high, especially if the farmer seeds alfalfa-grass. But some fertilizer programs aim at a theoretically ideal ratio of one nutrient to another. The key word in that sentence is "theoretically" since attempting to achieve this ratio can prove to be very expensive. While it's true that too much of certain plant nutrients can impact the uptake of other nutrients — the relationship of soil phosphorus to zinc, and of potassium to magnesium are two examples — we sometimes make crop fertilization more complicated than it has to be. Dairy farmers who apply manure have less need for secondary and minor nutrients than do cash crop farmers; manure is a multivitamin! Soil test regularly using a reputable soil test lab, consult with unbiased sources of information in crop fertilization, and try to keep it simple.

— E.T.

DO YOU HAVE A FORAGE SYSTEM?

Ruminants are designed to consume large quantities of forages and turn them into milk or protein. Forages provide fiber that can be broken down by microbes in the rumen and converted into energy: The more digestible the forage fiber, the more energy can be obtained from it. Forage fiber is characterized by several assays including neutral detergent fiber (NDF), undigested NDF (uNDF), and NDF digestibility (NDFd). Neutral detergent fiber is the measure of total fiber and related to intake and chewing activity. Undigested NDF is the measure of the indigestible fiber fraction by an in vitro fermentation for 240 hours and is related to gut fill. NDF digestibility is a measure of the fiber that has been digested after in vitro or in situ fermentation, usually 24 or 30 hours. These measures can be used to predict how well a cow will utilize forages. In times of low milk prices dairy producers need to find ways to reduce costs but not lose production or the health of their cows. One of the most effective methods to reduce feed costs is to grow high quality forages. An article by Pennsylvania State University Extension reported that the difference between a high profit herd and low profit herd was the ability to manage forage quality and inventory, which equated to 9% less in feed costs for the high profit herds. This method does not happen overnight, but with proper planning a forage system can be put into place.

The first step for a forage system is to estimate the quantity of the forage needed to feed your cows for a year and whether your available acres can grow it. This step is vital, as an error here can lead to running out of forage and having to purchase feed. The second step is selecting the forage varieties. This should be in conjunction with your agronomist and nutritionist to make sure the variety or hybrid works well with your soil and provides high quality fiber for your animals. When choosing a crop variety use trials that are most similar to your soil and environment. Use a variety of traits that characterize quantity and quality of nutrient factors that your forage provides. There are traits that do combine both quantity and quality such as NDF and potentially digestible NDF (pdNDF) yields. Ultimately the hybrid needs to provide enough feed for your animals, but also be of high enough quality to maximize intake and production of your cows. University of Nebraska researchers found that high-producing dairy cows had a greater response to high NDF digestibility corn silage than low-producing dairy cows. This may mean you have a certain hybrid that provides forages to your low-producing cows and growing heifers, while the high-producing cows get a hybrid with higher NDF digestibility.

Now that you have selected your crop varieties, it's important to minimize shrink from the field to the feedbunk. Making sure the silage is at a high packing density will help prevent oxygen exposure during feed out. To minimize loss during feedout Dr. Richard Muck recommends a packing density of 13.2 to 17.6 DM lb. / cu ft. Using a packer attached to the tractor will increase the weight when driving over the bunker or pile and will help achieve a high packing density. Another source of loss during feedout is an uneven face that allows oxygen to penetrate and cause spoilage. One method to reduce this loss is by using a defacer which will keep a clean face on the silage bunker or pile. A defacer will improve dry matter recovery even with a good feed-out rate and high packing density.

As milk prices continue to be variable it's vital for dairy producers to find ways to reduce expenses, and one of the largest expenses is feed. Forages are a large component of a dairy cow diet, and creating a forage system to match your cows' need is important for maximizing intake and milk production. Use all the available information from variety trials to gain insight on how well that variety will perform on your land. It will take time to put a forage system into place, but it will reduce feed costs and help weather low milk prices.

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STOP WORRYING, START PLANNING

It's a Thursday evening. Chores are done, the bunk's been covered, and supper was an hour ago. You've been thinking about the future while you stare at whatever show is flashing on the television screen – what's going to happen to the farm? Are the kids ready to take over? Is it time to pass on ownership? You know you're not going to live forever, but how does this all work? How will your living expenses be covered if you no longer operate the business? What exactly will you do in "retirement"? Perhaps it's time to start the discussion.

Starting the discussion is the first step in estate and succession planning. Estate planning is the process of arranging for the passing on of an estate – your assets and liabilities. Succession planning is arranging for transferring of management – both daily operations and major decision making. For this article, we'll focus on preparing for estate planning.

Knowing where you are and how you stand is critical to beginning the estate plan. Advisors, both financial and legal, will be looking for a checklist of information that often includes the following:

- Family information: Names, ages, and statuses of family members (and whether any are interested in taking over the farm); any other beneficiaries.
- Business information: Form of business, co-owners, and details of ownership, pertinent documents (if entity).
- A list of assets and liabilities: both personal and farm-related.
- Rented real estate acreage essential to the farm and any related lease documents.
- Bank accounts.
- Insurance policies: Life, long-term care, key person, etc.
- Retirement funds.
- Any preliminary estate planning information: Wills, trusts, social security information, etc.

Another step in the processes of starting your estate plan is to consider what you want to get out of the process and/or how you envision life after the plan is in place. Each person involved in the process, usually you and your spouse, should brainstorm a list of goals or objectives to accomplish. Your list may grow or change as you get further along in the process, and that's okay as long as you communicate those changes with everyone involved. Here are a few examples to get you started:

- Provide for living expenses for both spouses after retirement.
- Retire or "reinvent yourself" at age 65.
- Fully transfer farm assets to son and/or daughter.
- Be able to travel in retirement.
- Minimize estate and any other taxes.
- Quickly pass on assets and ownership responsibilities.
- Be sure farm remains a farm for future generations.

Next, there are a few important people to identify. You will need an attorney who can help you make decisions on which direction to pursue and to draw up legal documents. You may be asked if you have an executor or personal representative to see that your wishes are carried out, a trustee to manage a trust if you create one, and a guardian if you have minor children or dependents in your care. A financial advisor can help you clarify your objectives and develop alternatives from which to choose when putting together a plan for your attorney. He or she can also guide you through implementing the plan and monitoring progress.

Yankee Farm Credit offers business consulting services that can fulfill the role of a financial advisor as you venture into this next phase of business planning. Call your local office or check out our website, YankeeFarmCredit.com, to see what we can do for you. Good luck!

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WHAT'S HAPPENING ON THE FARM

Early in February our milking parlor got an overhaul. Our old system had sequencing gates attached to 11 posts cemented into the deck to separate the cows as they stood in the parlor. When the cows were done milking, a turn reel rotated 180 degrees to release the cows and push them out of the parlor. But the reel caused a lot of trouble with our large framed cows - it would hit the larger cows in the back as they left the parlor. Some of them had learned to run out quickly or kind of duck as the reel came around, but still sometimes they got hit on the back/ tailhead. The other problem that we encountered from time to time was a down cow in the parlor that got stuck in between the sequencing posts making it very difficult to lift her up and out.

Every year each department at Miner submits a budget to the board of trustees that includes normal operating expenses and capital items for purchase. We have set aside parlor renovations for almost 5 years in order to purchase some new equipment and work on clearing and tiling land, but this year we finally pushed the parlor to the top of the priority list. Our new parlor stalls and exiting system is from Turner Inc – a company that our Bou-matic Dealer (Champlain Dairy Service) has worked with quite a bit to retrofit and remodel milking parlors. The design is a vertical lift exit system with sequencing gates hinged on the stalls so there are no posts cemented into the floor. Now there is absolutely nothing in the way as the cows exit – nothing to hit them on the back, no way for a leg or hip to get stuck if they happen to go down.

A couple weeks before we removed the old stalls and reel, the guys from Champlain Dairy Service began doing some prep work. They installed conduit and ran new airlines and wiring, being careful to not drill holes into the in-floor heating. They also put up some new steel framework on our existing parlor and did other prep work so that installation would go quickly with minimal parlor downtime. And installation went very smoothly - we finished milking early on a Monday morning and as soon as the parlor was cleaned up, they began cutting out the old sequencing gate posts and the reel. New beams were bolted and welded in place and then everyone worked together to install the set of 12 stalls and sequencing gates. By mid afternoon we had a double 12 parlor again - one side with a reel and one side with a vertical lift. The next day they installed the other side.

As you can imagine, the cows were scared and nervous of the new parlor… the new smells and gate design and the sound of the pneumatic-driven vertical lift. Everyone worked together so well that week to get the cows in and milked. We had 3-4 people working every shift. For the first couple milkings we had to push the cows in one by one but slowly they learned and within a week to 10 days they were coming in just fine. So far we are really pleased with the new parlor – the cows stand comfortably in the stalls and there is no chance of them getting banged up or caught on anything as they exit after milking.

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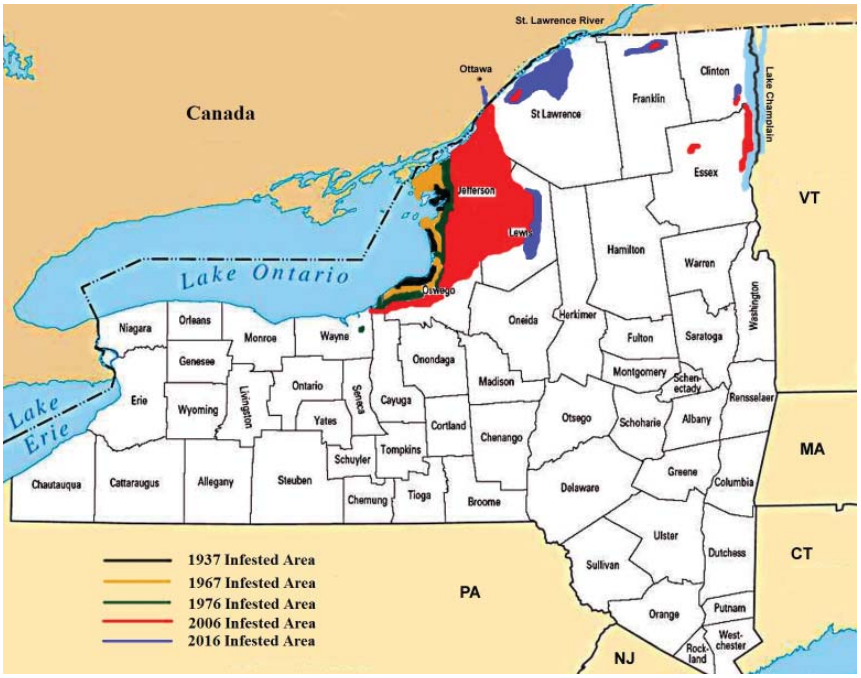
A SMALL BUG CREATING A HUGE PROBLEM

The alfalfa snout beetle has been wreaking havoc on alfalfa crops since alfalfa was first introduced as forage for the dairy industry in the 1920s. Currently, this destructive pest infests more than 500,000 acres throughout nine Northern New York counties and into a small portion of Ontario, Canada right across the St. Lawrence River. A report done by Cornell Cooperative Extension estimates that the damage sustained to the alfalfa can cost a farmer up to $381 per acre, depending on the cut system in place and the extent of the damage. In addition, there are a number of other indirect costs that are not even accounted for in that $381 per acre, such as: increased purchases of off-farm protein sources, increased cost of milk production, the larger harvest equipment and increased acreage required to grow a quality grass forage as opposed to alfalfa, and the impact on a farm's already in place nutrient management plan.



Alfalfa Snout Beetle is found in nine NY counties. Source: alfalfasnoutbeetle.org


Adult alfalfa snout beetles. Source: alfalfasnoutbeetle.org

Unfortunately, due to the nature of the snout beetle's life cycle and the timing of the destructive feeding behavior, infestations are not always identified. In early summer, a single snout beetle will lay up to 500 eggs in the soil. It is the resulting larvae that feed on the alfalfa roots from mid summer into late fall. Major plant injury and resultant death does not usually occur until after the final harvest of the year, allowing the damage to go unnoticed until spring and be attributed to winter kill, rather than from a pest infestation.

In the past, once a field was infested with the alfalfa snout beetle, the alfalfa stand was doomed and neighboring farms could only cross their fingers and hope the beetle did not find its way to their alfalfa fields. Some growers were even forced to grow only grass hay on their fields. The use of poison baits was enlisted from the 1940s through the early 1970s and was effective in controlling the spread of the snout beetle, but was discontinued due to environmental concerns. Insecticides applied to alfalfa fields was tried and found to be ineffective. Without a chemical option to control snout beetle infestations, the only remaining management strategy was to intensively rotate alfalfa crops. However, this strategy could only be effective with a coordinated community effort that was too difficult to implement and maintain. Thus the snout beetle continued to spread and the number of infested acres continued to enlarge. With alfalfa being a staple in most dairy cow rations, it was clear that a solution was needed.

In the early 1990s, Dr. Elson Shields discovered potential biological control organisms, insect-attacking microscopic worms (EPNs or nematodes), that were able to successfully reduce the amount of snout beetles present by 90-94% and reduce alfalfa stand loss to only 15%, as opposed to the 100% stand loss that was occurring before. Since then, research has continued and focused on persistence of the nematodes in the harsh northern New York climate and application techniques, including timing and dose rates, to maximize their effects on snout beetle populations while decreasing the cost to the farmer. Currently, the application of nematodes runs between $10-$20 per acre, depending on whether the nematodes are reared by the farmer or purchased from Cornell University. Although the nematodes can get expensive as the number of acres increases, they are a much more viable option than suffering the losses from a damaged alfalfa stand. With the snout beetle continuing to migrate, it might not be a bad idea to get ahead of the infestation and start looking into nematodes now! If you are interested in more information, Dr. Shields will be at the Beekmantown, NY Town Hall on March 28 at 10am for a free discussion on how to prevent snout beetle damage and the best management practices.

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SHOW ME YOUR DATA

With the release of low lignin alfalfa varieties there's a new lust for high forage digestibility, or at least claims of it. Almost every seed company seems to be selling high NDF digestibility corn hybrids and one or more "high quality" alfalfa variety (reduced lignin, multileaf, etc.). But just because a seed company promotes a corn hybrid or alfalfa variety as high digestibility doesn't necessarily mean that it is. (A horse is still a horse, even if you call it a cow.)

I closely follow university crop variety trial results, and particularly with corn hybrids I almost never find any hybrid other than BMR with meaningfully and reliably higher NDF digestibility than the trial average. By this I mean enough higher in digestibility that it would be expected to result in a meaningful change such as a ration adjustment and/or higher milk production, and not in just one hybrid trial. That's why it's good to have more than one location for these trials. Quality claims by the seed company are OK but it's much better to rely on independent (state university) trial results. Unfortunately, there's less of this data available due to cutbacks at Land Grant universities and the unwillingness by some large seed companies (for whatever reason) to enter their hybrids in university trials. Lacking unbiased data, if a seed company asserts higher quality for a corn hybrid or forage variety you should ask your dealer for proof to back up the claims. Utter those four magic words: Show me your data. And I put more weight on seed company data comparing its own products than its claims vs. a competing company's lineup. That said, a good seed dealer should know a lot about his/her products and is a valuable source of information, one I used to rely on back when I was managing Miner Institute's crop operation.

The idea of high-chopping corn for silage, something we evaluated at Miner Institute well over ten years ago, is once again getting attention in the farm press. The result of high chopping corn (18" stubble height, with some interest in 24" or higher) isn't a phenomenon as much as it is simple math: Concentrate a constant weight of corn grain in a reduced weight of stover and digestibility must increase: Grain contains little fiber while the lower portion of the stalk has more lignin and therefore lower digestibility than the top half. Feed a higher percent of grain in the silage and you'll need to feed less in the concentrate. High chopping increases starch content more than NDF-d; the modest improvement in NDF-d with high-chop corn surprises some folks. High chopping BMR corn hybrids isn't recommended because the stover (even the bottom portion of the plant) is reliably lower in lignin.

— *Ev Thomas*

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  Mike Van Amburgh, Cornell University
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NOW ACCEPTING APPLICATIONS FOR A YEAR-LONG DAIRY INTERNSHIP

We are now accepting applications for our next dairy management intern – a fantastic opportunity for a motivated college graduate who is looking for hands-on experience in dairy management. This year-long internship is a herdsman training program that is tailored to each intern and their career goals. The intern works closely with the herdsman and farm manager, but also works with the other farm employees as well – feeders, calf manager, milkers. Jobs include assisting with calving, fresh cow care, vaccination, heat detection and reproductive management, diagnosing and treating sick animals and using management software including Dairy Comp 305 and the SCR health and detection system. The intern will work with our herd veterinarian and nutritionist and will gain experience in labor management on the farm. There are many different learning and networking opportunities throughout the year - guest speakers and classes at the Institute and regional conferences.

Applicants should have at least some dairy experience, be motivated and show an ability to work hard and cooperate with others. It is important the intern be eager to learn, able to follow instructions and use good judgment and be fluent in English. The valuable on-farm experience and dairy management skills acquired through this internship makes it an ideal transition between college and a career in the dairy industry. Our previous interns are all working in the dairy industry, in different capacities – several are herdsmen, one is now a veterinarian, and another went on for her Master's Degree and became a dairy nutritionist in Wisconsin.

Miner Institute is an equal opportunity employer. In accordance with federal and state law, all applicants will be considered without regard to race, color, religion, sex, age, marital status, national origin, disability, military status, domestic violence victim status, predisposing genetic characteristics, sexual orientation or any other basis protected by law.

The internship is a paid position and housing is provided in our student complex. If you have questions or would like to apply for the position, please send your resume and a letter (outlining your career goals and how this internship would be mutually beneficial to our farm and to you) to Steve Couture at couture@whminer.com. We will be accepting applications until we find the right person, though we hope to have a new intern in place by May or June 2018.

HEAT STRESS, Continued from Page 1

resting and ruminating with greater than 90% of rumination occurring while cows are recumbent under comfortable conditions. Heat stress abatement consequently boosts rumination as it enhances lying time. At Miner Institute we've observed about 1 hour per day difference in rumination time for cows that were exposed to minimal heat stress abatement (fans only over the stalls) versus fans and sprinklers over the feed bunk and the free stalls.

We know that cows become heat stressed at a THI of only 68 with associated reductions in resting, rumination, feed intake, and milk production. As the cow's core body temperature rises she stands in an effort to speed cooling – and she's not likely to lie down again until her temperature is lowered. Resting is the cow's most valuable behavior, and we must do an effective job of cow cooling to get her into the stall and lying down to avoid productive and health problems associated with excessive standing time. The latest research confirms that the surest way to get a heat-stressed cow to lie down is to reduce her body temperature. Even in northern climates, heat abatement pays!

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SOIL & FORAGE FOCUS IN TOUGH ECONOMIC TIMES

When it comes to forage crop production on dairies, input costs (i.e., fertilizer, fuel, pesticides, labor) are a large annual expense. In this difficult economic dairy climate, what can you do to help maximize your returns? Cutting your expenses is an obvious one, however, it is important to consider where and where not to cut back on crop production inputs.

To minimize crop production and financial risk, it is important to follow sound agronomic practices backed by research. Below are five important soil and crop management practices that are proven to reduce crop production risk while increasing return on investment and efficiency.

Soil Management

1. Soil test, don't guess. The cost of a soil test is inexpensive compared to applying fertilizer you don't need or not applying fertilizer that you do need.
2. Apply manure at recommended rates based on its nutrient content and follow Land Grant University guidelines. The P and K in manure can be replaced for fertilizer P and K on a 1:1 basis. Manure has most all of the micronutrients you need. Incorporate manure whenever possible to capture more ammonia-nitrogen and reduce runoff losses.
3. Apply nitrogen on cool season grasses at green-up. Applying 70-80 lb N/ac at green-up can double yields and dramatically increase crude protein content. Increasing your inventory of high quality forage is money well spent.
4. Use starter fertilizer for corn only where you need it based on a soil test. This is not the year to apply the same rate of starter fertilizer on all of your corn ground! If you have soils testing >40 lb/ac of P (Morgan test) do not apply starter P. The chances of getting a yield response from additional P are extremely low. For high and optimum P fields, consider applying needed P from manure and just use a small amount of starter N.
5. Use PSNT soil tests prior to sidedressing corn with N. You can't afford to guess how much N to apply to your corn fields this year. PSNTs are not perfect, but they help determine whether you need additional N or not.

Forage Crop Management

1. Harvest hay crop and corn silage at peak quality. This is the most critical factor you can control to increase you return on investment. Harvest grasses at the boot stage, alfalfa at bud stage. Monitor dry matter content of forages and aim for 32-35% dry matter for hay crop and corn silage.
2. Consider no-tilling corn on better drained ground or after a hay crop. While no-till can be tricky, if you have the right planter setup and soil conditions, it can be done successfully. A small yield reduction could be offset by lower fuel and labor costs.
3. Plant corn in the right soil conditions. Avoid planting if soils are still cold and particularly if they are wet. Compaction and/or chilling injury can offset the potential yield advantage of planting early.
4. Take forage samples to assess quality and work with a nutritionist before feeding. It is important to make the most of your forages to maximize milk production potential while minimizing the amount of purchased feed you may need.
5. Take the time to pack bunk silos sufficiently and cover well. Proper packing is only achievable if the crop is harvested at the right moisture level. This will minimize nutrient losses and optimize quality of harvested forages.

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WHEN IT'S TIME, IT'S TIME

Euthanizing or culling a cow is always a hard decision to make and it is even harder to pull the trigger. As producers, we pour everything we have into our herd and to watch a cow become sick takes a toll, and especially if you have grown attached to certain cows. Having a euthanasia plan or a cull plan should be a part of every herd to avoid a rash decision or the prolonged suffering of an animal.

Sick pens have become an industry standard now and are a very useful tool to help with the welfare of sick animals. Being able to recognize a cow that is sick or extremely lame and moving her to a smaller pen where she can be treated and observed is valuable in that cow's welfare. By having this separation, we can better assess the situation and are able to treat and monitor that particular cow. What happens after putting her in the sick pen? Do we hesitate and delay making a decision about the future of this cow? Have you done everything that can be done to help her? What is your next step? Many challenging questions begin to cross your mind when you are trying to reach a verdict. If you're like me and sometimes unsure about things, using a decision tree may be beneficial. A decision tree is a tool that uses a tree-like graph of scenarios or questions to direct you toward a final decision. Many times producers may wait too long, prolonging an animal's suffering and the cow then dies on her own. That is something that we do not want to happen. When making a decision tree it is good to consult with your veterinarian on endpoint criteria, taking into consideration the normal behaviors of cows in their environment for all stages of production. Once the endpoints are clear then comes in the method of euthanasia, which all depends on the cow herself and the on-farm protocols that are in place. An example decision tree will help you decide if the animal herself needs to be euthanized after being treated, continue treatment, or immediate euthanasia.

The word, *euthanasia* is from Greek origin and means good death. No one enjoys making the decision but when its time, its time. Methods of euthanasia should produce a rapid death with no pain and distress. There are three primary methods of euthanasia and they include the barbiturate overdose, gunshot, and the penetrating captive bolt method. These three methods, when properly applied, can cause rapid loss of consciousness and death with no distress to the animal. One thing to note about the barbiturate overdose is that it is well received by the public unlike the bolt gun or gunshot. Another thing to note is that the gun shot or the penetrating captive bolt is a high risk to human safety, unlike the barbiturate overdose which is a low human risk. Ensuring that your employees have proper training and follow the proper safety protocols will help minimize the human safety risk. Maybe next time your veterinarian comes out to the farm, you can run the idea about timely euthanasia and develop a plan so that the next time a cow gets sick or goes down you have a solid plan on what to do next.

— Katie McMahon
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FIRST HARRY A. RANDY EDUCATION FUND RECIPIENT ENJOYS *TRIP OF A LIFETIME*

Through funds available from the Harry Randy Education Fund at Miner Institute, we awarded our first prize to Michael Duncan of Ormstown, Quebec at Dairy Day in December. Each year the trip to the western part of the country provides an incredible educational opportunity for our students and a few others. We enjoy having producers join our students on the trip. We plan to award the next trip at 2018 Dairy Day (not yet scheduled).

This note was recently received from our prize winning traveler:

Dear Wanda,

I wish to thank you and Miner Institute for the trip of a lifetime. I had often thought about trying to make such a trip to California, but never dreamt that it would happen. World Ag Expo was huge and I saw so much machinery that I had no clue what it did. Dealers were great to explain their wares to a green easterner. I knew California was dry, but it really is just short of being a desert. Several farmers would love to trade some rain for sun. One whole pavilion was just full of irrigation equipment. On the farm tour I saw my largest ever dairy farm, first almond trees, walnut trees, grape (raisin) vines. For anyone given the chance to tag along with Wanda and the Advanced Dairy Management class. Don't miss it, you will not regret it. On behalf of my daughter Melissa and myself thank you Wanda, our fearless leader.

— Michael Duncan
Ormstown QC.

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Is it spring yet?

Closing Comment

We never really grow up, we only learn how to act in public.

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